This Page Is Inserted by IFW Operations and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents will not correct images, please do not report the images to the Image Problem Mailbox.

SEMICONDUCTOR DEVICE

Patent Number:

JP5283460

Publication date:

1993-10-29

inventor(s):

SHIMIZU MITSUHARU

Applicant(s):

SHINKO ELECTRIC IND CO LTD

Application Number: JP19920109334 19920402

Priority Number(s):

IPC Classification:

H01L21/60, H01L21/56, H01L23/28

EC Classification:

Equivalents:

Abstract

PURPOSE:To obtain a compact semiconductor device by eliminating the need of an outer lead section extruding from a resin or package and a thick resin or package bottom wall covering the lower section of a

CONSTITUTION: A lead pattern 20 is formed on the upper surface of an insulating base film 10. A semiconductor chip 40 is sealed with a resin 60 on a base film 10. The middle section of the lead pattern 20 is exposed at the bottom of a through hole formed through the film 10 and solder bumps 30 are formed on the exposed section of the pattern 20 so that the bumps 30 can be extruded downward. Then the pattern 20 is connected to the connection pads of a substrate by using the bumps 30.

Data supplied from the esp@cenet database - 12